

REMARKS

The Office Action dated July 15, 2010 has been received and carefully reviewed. The following remarks form a full and complete response thereto. Claims 1-12 are pending. Applicants respectfully request favorable reconsideration of the application in view of the following remarks.

Claims 1, 2, 4, 5, 6, 8, 9, 10 and 12 are not obvious in view of Ziakovic et al. and Baraff et al.

Claims 1, 2, 4, 5, 6, 8, 9, 10 and 12 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,968,297 to Ziakovic et al. ("Ziakovic") in view of non-patent literature "Large Steps in Cloth Simulation," authored by Baraff and Witkin ("Baraff"). Neither Ziakovic nor Baraff disclose the claimed subject matter relating to surrounding the axes of a human model with the tubular parts that make up a virtual garment. Applicants traverse the entirety of this rejection.

Independent claims 1, 5, and 9 respectively recite a method, a device, and a computer program product for simulating wearing of a knit garment on a human model. Among other features, these claims each recite a feature related to shrinking/expanding parts of the garment toward axes matched with those parts such that for each of the tubular parts, at least one of (a) a portion of the tubular part contacts with the human model, and (b) a number of stitches per length of the tubular part reaches a predetermined value. Specifically, the independent claims recite the following claim limitations:

- shrinking/expanding the temporarily positioned knit garment toward the axis matched with each of the tubular parts of the knit garment in a peripheral direction such that for each one of the tubular parts, at least one of (a) a portion of said one tubular part contacts said human model, and (b) a number of stitches per length of said one tubular part reaches a predetermined value, so that when the knit garment is worn on the human model each of the tubular parts appears outside the human model, as recited in claim 1;
- wearing means for shrinking/expanding each of the tubular parts in a peripheral direction toward the matching axis such that for each one of the tubular parts, at least one of (a) a portion of said one tubular part contacts said human model, and (b) a number of stitches per length of said one tubular part reaches a predetermined value, so that each of the tubular parts appears outside the human model, wherein the knit garment which is temporarily positioned with respect to the axes is shrunk/expanded toward the axis matched with each of the tubular parts and worn on the human model, as recited in claim 5; and

- shrinking/expanding each of the tubular parts in a peripheral direction toward the matching axis such that for each one of the tubular parts, at least one of (a) a portion of said one tubular part contacts said human model, and (b) a number of stitches per length of said one tubular part reaches a predetermined value, so that each of the tubular parts appears outside the human model, wherein the knit garment which is temporarily positioned with respect to the axes is shrunk/expanded toward the axis matched with each of the tubular parts and worn on the human model, as recited in claim 9.

Put simply, these limitations claim a feature of the present invention that sets the initial position of the virtual garment, such that the tubular parts of the virtual garment surround the axes of a human model. This aspect of the present invention is thoroughly described in Applicants' specification, inter alia, at paragraphs [0038] and [0046].

The Office Action admits that Ziakovic fails to disclose the above recited claim limitations. See the Office Action at page 3 (“[n]either *Ziakovic* nor *Kotaki* expressly disclose the newly presented claim limitations, therefore the previously applied prior art rejections of claims 1, 5, and 9 have been withdrawn.”). The Office Action instead asserts that Baraff discloses the above recited limitations. See Office Action pg. 7. Applicants disagree.

The Office Action appears to assert that because Baraff discloses (1) that “stretch forces” are applied to the simulated garments and (2) the existence of virtual cloth/virtual solid interaction, that Baraff teaches or suggests the above recited limitations. This is not true for at least the following reasons.

First, Baraff's disclosure of “stretch forces” in no way discloses the “shrinking/expanding” feature of the claimed invention. Rather, “stretch forces” disclosed in Baraff are used to better ascribe properties of the stretch of real cloth to the virtual stretching of computer simulated cloth. See Baraff pgs. 5-6 and 11-12. For example, in a Pixar movie, if a computer-animated character wearing a shirt engages in physical movement, the shirt must move in a realistic manner. One aspect of the realistic manner of a garment's movement is its stretch. This mere disclosure of “stretch forces” in no way discloses the “shrinking/ expanding” of the claim limitations listed above. For at least this reason claims 1, 5, and 9 are patentable over the combination of Ziakovic and Baraff.

Second, Baraff's disclosure of virtual cloth/virtual solid interaction in no way discloses the use of virtual cloth/virtual solid contact as a way to place parameters on the “shrinking/expanding” limitation. See Baraff pgs. 3, 6, 11, and 12. As recited in the claims, shown above,

the contact ensures that “each of the tubular parts appears outside the human model.” Baraff’s disclosure in no way ties any form of “shrinking/ expanding” of a virtual garment to any form of contact between the virtual garment and a human model in order to ensure the appearance that the human model is wearing the virtual garment. Thus, Baraff’s limited disclosure falls well short of establishing a prima facie case under 35 U.S.C. § 103. For this additional reason claims 1, 5, and 9 are patentable over the combination of Ziakovic and Baraff.

For the above described reasons, claims 1, 5, and 9 are allowable over the combination of Ziakovic and Baraff. Likewise claims 2-4, 6-8, and 10-12, which depend from claims 1, 5, and 9, are also allowable over the combination of Ziakovic and Baraff. Applicants respectfully request that the rejection be withdrawn.

Claims 3 and 7 are not obvious in view of Ziakovic, Baraff, and Official Notice.

Claims 3 and 7 have been rejected under 35 U.S.C. 103(a) as unpatentable over Ziakovic in view of Baraff and further in view of Official Notice, as supported by U.S. Patent No. 4,306,429 to Warsop. As previously discussed at pages 11-13 of Applicants’ Reply to Non-final Office Action under 37 CFR 1.121, dated May 20, 2010, the Examiner’s Official Notice is improper at least for the reason that it is unsupported by Warsop. Applicants traverse the entirety of this rejection.

The Office Action takes Official Notice that “having a stitch on a virtual or actual garment be arranged or re-arranged along the course or whale [sic] direction is well known in the garment art.” See Office Action pg. 10. To support this Official Notice, the Office Action proffers Warsop as evidence.

Warsop discloses a “stitch bonded fleece fabric” including, among other features, a “back bar structure . . . [that] extends over at least two adjacent wales of the front bar structure.” Warsop at col. 3, ll. 42-44. Warsop may arguably support a proposition that “courses” and “wales,” as structural components of knit garments, are well known in the garment art. Indeed, knitting artisans have understood the terminology of courses and wales for many years, if not for centuries. However, it is undeniable that Warsop is directed to the actual physical construction of an actual physical fabric, and in no way addresses the concerns of simulating a knit garment. It is these concerns, e.g., rearranging simulated stitches in a simulated garment, which the current invention is directed to.

The use of Warsop is improper and inadequate to support the asserted Official Notice, for at least the reason that Warsop in no way discloses any form of arranging or re-arranging stitches in a virtual garment. Official Notice does not excuse the Office from performing its duties, but rather provides a way for the Office to make rejections based on “facts asserted to be well-known, or to be common knowledge in the art [that] are capable of instant and unquestionable demonstration as being well-known.” See MPEP § 2144.03. It is made clear by the Office Action’s citation of Warsop that the Official Notice is, in fact, not “capable of instant and unquestionable demonstration as being well-known.” Applicants respectfully request that the Official Notice be supported by adequate evidence or immediately withdrawn. Because the Official Notice is improper, the rejection of claim 3 and 7 is likewise improper and Applicants request that it be immediately withdrawn.

CONCLUSION

In view of the above, all rejections have been sufficiently addressed, and reconsideration is requested. The Applicants submit that the application is now in condition for allowance and request that all pending claims be allowed and this application passed to issue.

In the event that this paper is not timely filed, the Applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account No. 02 2135.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the Applicants’ undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

Respectfully submitted,

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